

AMENDMENTS**Amendments to the Claims**

1-3. (Canceled)

4. (Currently amended) A botulinum toxin serotype A (BoNT/A) substrate, comprising:

(a) a donor fluorophore;

(b) an acceptor fluorophore having an absorbance spectrum overlapping the emission spectrum of said donor fluorophore; and

(c) a BoNT/A recognition sequence comprising a cleavage site, wherein said cleavage site intervenes between said donor fluorophore and said acceptor fluorophore;

~~wherein at least 14 amino acids separate said donor fluorophore from said acceptor; and~~

wherein, under the appropriate conditions, resonance energy transfer is exhibited between said donor fluorophore and said acceptor fluorophore.

5. (Currently amended) The BoNT/A substrate of claim 4, wherein said BoNT/A substrate comprises ~~comprising~~ at least six consecutive residues of SNAP-25, said six consecutive residues comprising Gln-Arg, or a peptidomimetic thereof.

6. (Currently amended) The BoNT/A substrate of claim 5, wherein said BoNT/A substrate comprises ~~comprising~~ at least six consecutive residues of a human SNAP-25, said six consecutive residues comprising Gln₁₉₇-Arg₁₉₈, or a peptidomimetic thereof.

7. (Currently amended) The BoNT/A substrate of claim 6, wherein said BoNT/A recognition sequence comprises SEQ ID NO: 27~~comprising the amino acid sequence Glu-Ala-Asn-Gln-Arg-Ala-Thr-Lys (SEQ ID NO: 1),~~ or a peptidomimetic thereof.
8. (Currently amended) The BoNT/A substrate of claim 6, wherein said BoNT/A recognition sequence comprises SEQ ID NO: 29~~comprising residues 187 to 203 of human SNAP-25 (SEQ ID NO: 2),~~ or a peptidomimetic thereof.
- 9-44. (Canceled)
45. (Currently amended) The BoNT/A substrate of claim 4, wherein said substrate can be cleaved with an activity of at least 1 nanomole/minute/milligram toxin.
46. (Currently amended) The BoNT/A substrate of claim 4, wherein said BoNT/A substrate can be cleaved with an activity of at least 20 nanomole/minute/milligram toxin.
47. (Currently amended) The BoNT/A substrate of claim 4, wherein said BoNT/A substrate can be cleaved with an activity of at least 50 nanomole/minute/milligram toxin.
48. (Currently amended) The BoNT/A substrate of claim 4, wherein said BoNT/A substrate can be cleaved with an activity of at least 100 nanomole/minute/milligram toxin.
49. (Currently amended) The BoNT/A substrate of claim 4, wherein said BoNT/A substrate can be cleaved with an activity of at least 150 nanomole/minute/milligram toxin.
50. (Canceled)
51. (Currently amended) The BoNT/A substrate of ~~claim 50~~ claim 4, wherein said acceptor fluorophore has a fluorescent lifetime of at least 1 microsecond.

52. (Currently amended) The BoNT/A substrate of claim 4, wherein said ~~donor acceptor~~ is ~~an acceptor fluorophore~~ is BODIPY[®]-530/550 (4,4-difluoro-5,7-diphenyl-4-bora-3a,4a-diaza-S-indacene).
53. (Currently amended) The BoNT/A substrate of claim 4, wherein said donor fluorophore is fluorescein.
54. (Canceled)
55. (Currently amended) The BoNT/A substrate of claim 4, wherein said donor fluorophore ~~is 4-(4-dimethylaminophenylazo)benzoic acid (DABCYL)~~ DABCYL has an emissions maxima of about 603 nm.
56. (Canceled)
57. (Currently amended) The BoNT/A substrate of claim 4 or claim 53, wherein said acceptor fluorophore is tetramethylrhodamine.
58. (Currently amended) The BoNT/A substrate of claim 4 or claim 55, wherein said acceptor fluorophore has an excitation maxima of about 679 nm ~~is 5-[(2-aminoethyl)amino]-naphthalene-1-sulfonic acid (EDANS)~~ EDANS.
59. (Currently amended) The BoNT/A substrate of claim 4 or ~~claim 53~~ claim 52, wherein said acceptor fluorophore ~~is BODIPY[®]-542/563 (4,4 difluoro-5-p-methoxyphenyl-4-bora-3a,4a-diaza-S-indacene)~~ a non-fluorescent acceptor.
60. (Currently amended) The BoNT/A substrate of claim 4, ~~which is a peptide or peptidomimetic having at most 100 residues~~ wherein said donor fluorophore is BODIPY[®]-542/563 (4,4 difluoro-5-p-methoxyphenyl-4-bora-3a,4a-diaza-S-indacene).

61. (Currently amended) The BoNT/A substrate of claim 4 or claim 60, which is a peptide or peptidomimetic having at most 50 residues wherein said acceptor fluorophore is BODIPY[®]-564/570 (4,4 difluoro-5-styryl-4-bora-3a,4a-diaza-S-indacene).
62. (Currently amended) The BoNT/A substrate of claim 4, which is a peptide or peptidomimetic having at most 40 residues wherein said donor fluorophore is Cy3.
63. (Currently amended) The BoNT/A substrate of claim 4 or claim 62, which is a peptide or peptidomimetic having at most 20 residues wherein said acceptor fluorophore is Cy5.
- 64-95. (Canceled)
96. (Currently amended) The BoNT/A substrate of claim 4, wherein said BoNT/A substrate has a length of 19 amino acids at most 20 residues.
97. (Currently amended) The BoNT/A substrate of claim 4, wherein said BoNT/A substrate has a length of 20 amino acids at most 40 residues.
98. (Currently amended) The BoNT/A substrate of claim 4, wherein said BoNT/A substrate has a length of 21 amino acids at most 50 residues.
99. (Currently amended) The BoNT/A substrate of claim 4, wherein said BoNT/A substrate has a length of 22 amino acids at most 100 residues.
100. (Currently amended) The BoNT/A substrate of claim 4, wherein said BoNT/A substrate has a length of 69 amino acids at most 150 residues.
101. (Currently amended) The BoNT/A substrate of claim 4, wherein said BoNT/A substrate has a length of 72 amino acids at most 200 residues.
102. (Currently amended) A botulinum toxin serotype A (BoNT/A) substrate, comprising:

(a) a donor fluorophore;

(b) an acceptor having an absorbance spectrum overlapping the emission spectrum of said donor fluorophore; and

(c) a BoNT/A recognition sequence comprising a cleavage site, said BoNT/A recognition sequence comprising the amino acids 191 to 202 of SEQ ID NO: 2, or a peptidomimetic thereof;

wherein said cleavage site intervenes between said donor fluorophore and said acceptor;

wherein said donor fluorophore, said acceptor, or both said donor fluorophore and said acceptor is not positioned within amino acids 191 to 202 of SEQ ID NO: 2, or a peptidomimetic thereof; and

wherein, under the appropriate conditions, resonance energy transfer is exhibited between said donor fluorophore and said acceptor.

103. (Currently amended) The BoNT/A substrate of claim 102, wherein said BoNT/A recognition sequence comprises SEQ ID NO: 29~~comprising the amino acid sequence Ser-Asn-Lys-Thr-Arg-Ile-Asp-Glu-Ala-Asn-Gln-Arg-Ala-Thr-Lys-Met (SEQ ID NO: 29),~~ or a peptidomimetic thereof.

104. (Currently amended) The substrate of claim 102, wherein said BoNT/A recognition sequence comprises SEQ ID NO: 30~~comprising the amino acid sequence Ser-Asn-Lys-Thr-Arg-Ile-Asp-Glu-Ala-Asn-Gln-Arg-Ala-Thr-Lys-Met-Leu (SEQ ID NO: 30),~~ or a peptidomimetic thereof.

105. (Currently amended) The BoNT/A substrate of any of claims 102, 103 or 104, wherein said BoNT/A substrate can be cleaved with an activity of at least 1 nanomole/minute/milligram toxin.
106. (Currently amended) The BoNT/A substrate of any of claims 102, 103 or 104, wherein said BoNT/A substrate can be cleaved with an activity of at least 20 nanomole/minute/milligram toxin.
107. (Currently amended) The BoNT/A substrate of any of claims 102, 103 or 104, wherein said BoNT/A substrate can be cleaved with an activity of at least 50 nanomole/minute/milligram toxin.
108. (Currently amended) The BoNT/A substrate of any of claims 102, 103 or 104, wherein said BoNT/A substrate can be cleaved with an activity of at least 100 nanomole/minute/milligram toxin.
109. (Currently amended) The BoNT/A substrate of any of claims 102, 103 or 104, wherein said BoNT/A substrate can be cleaved with an activity of at least 150 nanomole/minute/milligram toxin.
110. (Currently amended) The BoNT/A substrate of claim 102, wherein said acceptor is an acceptor fluorophore.
111. (Currently amended) The BoNT/A substrate of claim 110, wherein said acceptor fluorophore has a fluorescent lifetime of at least 1 microsecond.
112. (Currently amended) The BoNT/A substrate of claim 102, wherein said acceptor is a non-fluorescent acceptor.
113. (Currently amended) The BoNT/A substrate of claim 102, wherein said donor fluorophore is fluorescein.

114. (Currently amended) The BoNT/A substrate of claim 102, wherein said donor fluorophore is ~~DABCYL~~ EDANS
115. (Currently amended) The BoNT/A substrate of claim 102 or 113, wherein said acceptor is a fluorophore, said acceptor fluorophore being tetramethylrhodamine.
116. (Currently amended) The BoNT/A substrate of claim 102 or 114, wherein said acceptor is a non-fluorescent acceptor, said non-fluorescent acceptor being EDANS DANCYL.
117. (Currently amended) The BoNT/A substrate of ~~claim 113~~ claim 112, wherein said ~~acceptor is a non-fluorescent acceptor~~ is DNP, DABCYL, DABSYL or QSY®-7.
118. (Currently amended) The BoNT/A substrate of claim 102, wherein said BoNT/A substrate has ~~which is a peptide or peptidomimetic having~~ at most 100 residues.
119. (Currently amended) The BoNT/A substrate of claim 102, wherein said BoNT/A substrate has ~~which is a peptide or peptidomimetic having~~ at most 50 residues.
120. (Currently amended) The BoNT/A substrate of claim 102, wherein said BoNT/A substrate has ~~which is a peptide or peptidomimetic having~~ at most 40 residues.
121. (Currently amended) The BoNT/A substrate of claim 102, wherein said BoNT/A substrate has ~~which is a peptide or peptidomimetic having~~ at most 20 residues.
122. (Currently amended) The BoNT/A substrate of claim 102, wherein said donor fluorophore and said acceptor are separated by at most fifteen residues.
- 123-125. (Canceled)
126. (Currently amended) A botulinum toxin serotype A (BoNT/A) substrate, comprising:

(a) a donor fluorophore;

(b) an acceptor having an absorbance spectrum overlapping the emission spectrum of said donor fluorophore; and

(c) a BoNT/A recognition sequence comprising a cleavage site, said BoNT/A recognition sequence comprising SEQ ID NO: 29, or a peptidomimetic thereof;

wherein said cleavage site intervenes between said donor fluorophore and said acceptor;

wherein said donor fluorophore or said acceptor is genetically encoded; and

wherein, under the appropriate conditions, resonance energy transfer is exhibited between said donor fluorophore and said acceptor.

127. (Currently amended) The BoNT/A substrate of claim 126, wherein said donor fluorophore is genetically encoded.

128. (Currently amended) The BoNT/A substrate of claim 126, wherein said acceptor is genetically encoded.

129. (Currently amended) The BoNT/A substrate of claim 126, wherein said donor fluorophore and said acceptor are genetically encoded.

130. (Currently amended) The BoNT/A substrate of claim 126, wherein said BoNT/A substrate comprises ~~comprising~~ at least six consecutive residues of SNAP-25, said six consecutive residues comprising Gln-Arg.

131. (Currently amended) The BoNT/A substrate of claim 130, wherein said BoNT/A substrate comprises ~~comprising~~ at least six consecutive residues of a human SNAP-25, said six consecutive residues comprising Gln₁₉₇-Arg₁₉₈.
132. (Currently amended) The BoNT/A substrate of claim 131, wherein said BoNT/A substrate comprises ~~comprising~~ the amino acid sequence Glu-Ala-Asn-Gln-Arg-Ala-Thr-Lys (SEQ ID NO: 1).
133. (Currently amended) The BoNT/A substrate of claim 131, wherein said BoNT/A recognition sequence comprises SEQ ID NO: 27 ~~comprising residues 187 to 203 of human SNAP-25 (SEQ ID NO: 2)~~.
134. (Currently amended) The BoNT/A substrate of either claim 126 or claim 129, wherein said BoNT/A substrate can be cleaved with an activity of at least 1 nanomole/minute/milligram toxin.
135. (Currently amended) The BoNT/A substrate of either claim 126 or claim 129 wherein said BoNT/A substrate can be cleaved with an activity of at least 20 nanomole/minute/milligram toxin.
136. (Currently amended) The BoNT/A substrate of either claim 126 or claim 129, wherein said BoNT/A substrate can be cleaved with an activity of at least 50 nanomole/minute/milligram toxin.
137. (Currently amended) The BoNT/A substrate of either claim 126 or claim 129, wherein said BoNT/A substrate can be cleaved with an activity of at least 100 nanomole/minute/milligram toxin.
138. (Currently amended) The BoNT/A substrate of either claim 126 or claim 129, wherein said BoNT/A substrate can be cleaved with an activity of at least 150 nanomole/minute/milligram toxin.

139. (Currently amended) The BoNT/A substrate of claim 126, wherein said acceptor is an acceptor fluorophore.
140. (Currently amended) The BoNT/A substrate of claim 139, wherein said acceptor fluorophore has a fluorescent lifetime of at least 1 microsecond.
141. (Currently amended) The BoNT/A substrate of claim 126, wherein said BoNT/A substrate has ~~which is a peptide having~~ at most 400 residues.
142. (Currently amended) The BoNT/A substrate of claim 126, wherein said BoNT/A substrate has ~~which is a peptide having~~ at most 500 residues.
143. (Currently amended) The BoNT/A substrate of claim 126, wherein said BoNT/A substrate has ~~which is a peptide having~~ at most 600 residues.
144. (Currently amended) The BoNT/A substrate of claim 126, wherein said BoNT/A substrate has ~~which is a peptide having~~ at most 700 residues.
145. (Currently amended) The BoNT/A substrate of claim 126, wherein said donor fluorophore and said acceptor are separated by at most fifteen residues.
146. (Currently amended) The BoNT/A substrate of claim 126, wherein said donor fluorophore and said acceptor are separated by at most ~~ten~~ thirty-five residues.
- 147-148. (Canceled)
149. (Currently amended) The BoNT/A substrate of claim 4, wherein said donor fluorophore and said acceptor are separated by at most ~~twenty~~ ten residues.
150. (Currently amended) The BoNT/A substrate of claim 4, wherein said donor fluorophore and said acceptor are separated by at most ~~twenty-five~~ fifteen residues.

151. (Currently amended) The BoNT/A substrate of claim 4, wherein said donor fluorophore and said acceptor are separated by at most ~~thirty~~twenty residues.
152. (Currently amended) The BoNT/A substrate of claim 4, wherein said donor fluorophore and said acceptor are separated by at most ~~thirty-five~~thirty residues.
153. (Currently amended) The BoNT/A substrate of claim 4, wherein said donor fluorophore and said acceptor are separated by at most forty residues.
154. (Currently amended) The BoNT/A substrate of claim 4, wherein said BoNT/A substrate is selected from the group consisting of SEQ ID NO: 85, SEQ ID NO: 88, SEQ ID NO: 89, SEQ ID NO: 90, SEQ ID NO: 91, SEQ ID NO: 92, SEQ ID NO: 93, SEQ ID NO: 94 and SEQ ID NO: 95.
155. (Currently amended) The BoNT/A substrate of claim 102, wherein said donor fluorophore and said acceptor are separated by at most twenty residues.
156. (Currently amended) The BoNT/A substrate of claim 102, wherein said donor fluorophore and said acceptor are separated by at most twenty-five residues.
157. (Currently amended) The BoNT/A substrate of claim 102, wherein said donor fluorophore and said acceptor are separated by at most thirty residues.
158. (Currently amended) The BoNT/A substrate of claim 102, wherein said donor fluorophore and said acceptor are separated by at most thirty-five residues.
159. (Currently amended) The BoNT/A substrate of claim 102, wherein said donor fluorophore and said acceptor are separated by at most forty residues.
160. (Currently amended) The BoNT/A substrate of claim 126, wherein said BoNT/A substrate has ~~which is a peptide or peptidomimetic having~~ at least 300 residues.

161. (Currently amended) The BoNT/A substrate of claim 126, wherein said BoNT/A substrate has ~~which is a peptide or peptidomimetic having~~ at least 400 residues.
162. (Currently amended) The BoNT/A substrate of claim 126, wherein said BoNT/A substrate has ~~which is a peptide or peptidomimetic having~~ at least 500 residues.
163. (Currently amended) The BoNT/A substrate of claim 126, wherein said BoNT/A substrate has ~~which is a peptide or peptidomimetic having~~ at least 600 residues.
164. (Currently amended) The BoNT/A substrate of claim 126, wherein said BoNT/A substrate has ~~which is a peptide or peptidomimetic having~~ at least 700 residues.
165. (Currently amended) The BoNT/A substrate of claim 126, wherein said donor fluorophore and said acceptor are separated by at most twenty residues.
166. (Currently amended) The BoNT/A substrate of claim 126, wherein said donor fluorophore and said acceptor are separated by at most twenty-five residues.
167. (Currently amended) The BoNT/A substrate of claim 126, wherein said donor fluorophore and said acceptor are separated by at most thirty residues.
168. (Currently amended) The BoNT/A substrate of claim 126, wherein said donor fluorophore and said acceptor are separated by at most forty residues.
169. (Canceled).
170. (Currently amended) The BoNT/A substrate of claim 126, wherein said donor fluorophore and said acceptor are separated by at least 50 residues.
171. (Currently amended) The BoNT/A substrate of claim 126, wherein said donor fluorophore and said acceptor are separated by at least 75 residues.

172. (Currently amended) The BoNT/A substrate of claim 126, wherein said donor fluorophore and said acceptor are separated by at least 100 residues.
173. (Currently amended) The BoNT/A substrate of claim 126, wherein said donor fluorophore and said acceptor are separated by at least 125 residues.
174. (Currently amended) The BoNT/A substrate of claim 126, wherein said donor fluorophore and said acceptor are separated by at least 150 residues.
175. (Currently amended) The BoNT/A substrate of claim 126, wherein said donor fluorophore and said acceptor are separated by at least 200 residues.
176. (Currently amended) The BoNT/A substrate of claim 102, wherein said donor fluorophore and said acceptor are separated by at most ten residues.
177. (Currently amended) The BoNT/A substrate of claim 102, wherein said donor fluorophore and said acceptor are separated by at most eight residues.
178. (Currently amended) The BoNT/A substrate of claim 102, wherein said donor fluorophore and said acceptor are separated by at most six residues.
179. (New) The BoNT/A substrate of claim 102, wherein said donor fluorophore is not positioned within amino acids 191 to 202 of SEQ ID NO: 2, or a peptidomimetic thereof.
180. (New) The BoNT/A substrate of claim 102, wherein said acceptor is not positioned within amino acids 191 to 202 of SEQ ID NO: 2, or a peptidomimetic thereof.
181. (New) The BoNT/A substrate of claim 102, wherein said donor fluorophore and said acceptor are not positioned within amino acids 191 to 202 of SEQ ID NO: 2, or a peptidomimetic thereof.

182. (New) The BoNT/A substrate of claim 102, wherein said BoNT/A substrate comprises at least six consecutive residues of SNAP-25, said six consecutive residues comprising Gln-Arg.
183. (New) The BoNT/A substrate of claim 182, wherein said BoNT/A substrate comprises at least six consecutive residues of a human SNAP-25, said six consecutive residues comprising Gln₁₉₇-Arg₁₉₈.
184. (New) The BoNT/A substrate of claim 102, wherein said donor fluorophore is BODIPY[®]-530/550 (4,4 difluoro 5,7 diphenyl 4 bora-3a,4a-diaza-S-indacene).
185. (New) The BoNT/A substrate of claim 102 or claim 184, wherein said acceptor is a fluorophore, said acceptor fluorophore being BODIPY[®]-542/563 (4,4 difluoro-5-p-methoxyphenyl-4-bora-3a,4a-diaza-S-indacene).
186. (New) The BoNT/A substrate of claim 102, wherein said donor fluorophore is BODIPY[®]-542/563 (4,4 difluoro-5-p-methoxyphenyl-4-bora-3a,4a-diaza-S-indacene).
187. (New) The BoNT/A substrate of claim 102 or claim 186, wherein said acceptor is a fluorophore, said acceptor fluorophore being BODIPY[®]-564/570 (4,4 difluoro-5-styryl-4-bora-3a,4a-diaza-S-indacene).
188. (New) The BoNT/A substrate of claim 102, wherein said donor fluorophore is Cy3.
189. (New) The BoNT/A substrate of claim 102 or claim 188, wherein said acceptor is a fluorophore, said acceptor fluorophore being Cy5.
190. (New) The BoNT/A substrate of claim 102, wherein said donor fluorophore has an emission maxima of about 603 nm.

191. (New) The BoNT/A substrate of claim 102 or claim 190, wherein said acceptor is a fluorophore, said acceptor fluorophore having an excitation maxima having an excitation maxima of about 679 nm.
192. (New) The BoNT/A substrate of claim 102, wherein said donor fluorophore has an emission maxima of about 690 nm.
193. (New) The BoNT/A substrate of claim 102 or claim 192, wherein said acceptor is a fluorophore, said acceptor fluorophore having an excitation maxima of about 749 nm.
194. (New) The BoNT/A substrate of claim 102, wherein said donor fluorophore is pyrene.
195. (New) The BoNT/A substrate of claim 102 or claim 194, wherein said acceptor is a fluorophore, said acceptor fluorophore being coumarin.
196. (New) The BoNT/A substrate of claim 126, wherein said BoNT/A substrate comprises at most 300 residues.
197. (New) The BoNT/A substrate of claim 126, wherein said BoNT/A substrate comprises at most 350 residues.
198. (New) The BoNT/A substrate of claim 126, wherein said BoNT/A recognition sequence comprises amino acids 137 to 206 of SEQ ID NO: 2.
199. (New) The BoNT/A substrate of claim 126, wherein said BoNT/A recognition sequence comprises amino acids 134 to 206 of SEQ ID NO: 2.
200. (New) The BoNT/A substrate of either claim 127 or 129, wherein said genetically encoded donor fluorophore is selected from the group consisting of a blue fluorescent protein, a cyan fluorescent protein, a green fluorescent protein, a yellow fluorescent protein and a red fluorescent protein.

201. (New) The BoNT/A substrate of either claim 128 or 129, wherein said genetically encoded acceptor is a fluorophore, said genetically encoded acceptor fluorophore selected from the group consisting of a blue fluorescent protein, a cyan fluorescent protein, a green fluorescent protein, a yellow fluorescent protein and a red fluorescent protein.
202. (New) The BoNT/A substrate of claim 129, wherein said genetically-encoded acceptor is a fluorophore.
203. (New) The BoNT/A substrate of claim 196, wherein said donor fluorophore is a blue fluorescent protein, said acceptor fluorophore is a green fluorescent protein and said BoNT/A recognition sequence comprises SEQ ID NO: 29.
204. (New) The BoNT/A substrate of claim 196, wherein said donor fluorophore is a blue fluorescent protein, said acceptor fluorophore is a green fluorescent protein and said BoNT/A recognition sequence comprises amino acids 137-206 of SEQ ID NO: 2.
205. (New) The BoNT/A substrate of claim 196, wherein said donor fluorophore is a blue fluorescent protein, said acceptor fluorophore is a green fluorescent protein and said BoNT/A recognition sequence comprises amino acids 134-206 of SEQ ID NO: 2.
206. (New) The BoNT/A substrate of claim 196, wherein said donor fluorophore is a blue fluorescent protein, said acceptor fluorophore is a green fluorescent protein and said BoNT/A recognition sequence comprises SEQ ID NO: 2.
207. (New) The BoNT/A substrate of claim 196, wherein said donor fluorophore is a green fluorescent protein, said acceptor fluorophore is a red fluorescent protein and said BoNT/A recognition sequence comprises SEQ ID NO: 29.
208. (New) The BoNT/A substrate of claim 196, wherein said donor fluorophore is a cyan fluorescent protein, said acceptor fluorophore is a yellow fluorescent protein and said BoNT/A recognition sequence comprises SEQ ID NO: 29.

209. (New) The BoNT/A substrate of claim 127, wherein said acceptor is a fluorophore.
210. (New) The BoNT/A substrate of claim 209, wherein said donor fluorophore is a green fluorescent protein, said acceptor fluorophore has an excitation maxima of about 556 nm and said BoNT/A recognition sequence comprises SEQ ID NO: 29.
211. (New) The BoNT/A substrate of claim 209, wherein said donor fluorophore is a red fluorescent protein, said acceptor fluorophore has an excitation maxima of about 632 nm and said BoNT/A recognition sequence comprises SEQ ID NO: 29.